Audit of Forest Planning and Practices

Canadian Forest Products Ltd.
Fort St. James Division
Forest Licence A40873

FPB/ARC/26

August 2000

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A. Report from the Board

This is the Board's report on a compliance audit of Forest Licence A40873 held by Canadian Forest Products Ltd. (Canfor). The Report from the Auditor (Part B) describes the operating areas of the forest licence, the portion of the licence audited and the scope of the audit.

Before completing this report, the Board considered extensive written representations from Canfor as required under section 182 of the *Forest Practices Code of British Columbia Act* (the Act). The Board also considered the Report from the Auditor along with supporting audit evidence. Based on its analysis of this information, the Board affirms the Auditor's findings and conclusions.

Conclusions

Canfor's operational planning and forest practices generally complied with Forest Practices Code requirements. The only significant non-compliance involved planning and practices for the management of mountain pine beetle.

Proactive mountain pine beetle management requires sufficiently sampling the size of beetle populations and monitoring beetle population trends. Canfor had not collected adequate information on current mountain pine beetle populations as required by section 29(1) of the Operational Planning Regulation in effect at the time of the audit. Instead, Canfor relied on aerial photographs with some ground checking. However, much of the ground data preceded the audit period by a number of years. Information on beetles detected in aerial photographs and in those outdated ground probes would not have been useful because the beetles would have flown and bred again before the cutblocks were harvested. The only current data that Canfor collected lacked sufficient detail to provide information about the extent of current beetle attack and future population trends.

Aerial photographs can be used to identify red trees that have died as a result of mountain pine beetle attack. Since it can take a year or more for a tree to die after being attacked, green trees that have recently been attacked and contain living beetles cannot be identified in aerial photographs. However, those trees can be identified using appropriate ground checks.

With more current, accurate and sufficient ground information, Canfor could develop a strategy that could target and more effectively control current infestations of mountain pine beetle. Such a strategy should ensure that cutblock design is appropriate to capture the infestations and reduce the risk to other resources. Canfor's approach to managing mountain pine beetle, as it was at the time of the audit, could jeopardize adequate management for other resources, particularly scenic values around lakes and those resources that should be managed at the landscape level.

Recommendations

As provided by section 185 of the Act, the Board recommends that Canadian Forest Products Ltd.:

a) collect current, relevant stand and infestation data, including the results of probes such as those described in the Bark Beetle Management Guidebook;

b) evaluate the data to determine beetle population trends and more clearly define the placement, configuration and timing of proposed harvesting areas; and

c) develop and implement specific management strategies and treatments, based on the detailed information collected, to reduce the risk from mountain pine beetle and adequately manage and conserve other forest resources.

In accordance with section 186 of the Act, the Board requests that Canadian Forest Products Ltd. advise the Ministry of Forests, Fort St. James Forest District by November 30, 2000, with a copy to the Board, of the actions taken and the timing involved to address this recommendation.

The Board requests that the Ministry of Forests, Fort St. James Forest District, confirm by February 28, 2001, that Canadian Forest Products Ltd.'s operational plans and beetle management strategies include information that addresses the above recommendation.

Provisions for Non-Timber Forest Resources in Forest Development Plans

The Code does not require that forest development plans address landscape-level objectives that have not been formally established as higher level plans. Landscape-level objectives have not yet been established in the Fort St. James Forest District. As a result, there is no assurance that all forest resources are being adequately addressed at the landscape level.

This lack of landscape-level objectives diminishes the opportunity for public review and comment on the forest development plan, limits Canfor's legal obligation to manage or protect forest resources, and may limit government enforcement unless measures to protect these resources are included in Canfor's operational plans at the site level.

Recommendations

As provided by section 185 of the Act, the Board makes the following recommendations.

1. The Board recommends that, despite the absence of formally designated higher level plans, Canadian Forest Products Ltd. incorporate measures for protecting non-timber forest resource values in its operational plans to correct the deficiencies noted in section 4.0 of the Report from the Auditor.

2. The Board recommends that the Ministers expedite the development and establishment of higher level plans, including landscape unit objectives, or have the district manager identify or make known certain forest resources in a way that assists Canadian Forest Products Ltd. in addressing non-timber forest resources in its forest development plans.

In accordance with section 186 of the Act, the Board requests that Canadian Forest Products Ltd. advise the Board by November 30, 2000 of the actions taken to implement recommendation 1.

In accordance with section 186 of the Act, the Board requests that the Ministers advise the Board by November 30, 2000 of the actions taken to implement recommendation 2.

W.N. (Bill) Cafferata, R.P.F.
Chair

August 4, 2000

B. Report from the Auditor

1.0 Introduction

As part of the Forest Practices Board's 1998 compliance audit program, Forest Licence A40873 was selected for audit from the population of major forest licences within the Prince George Forest Region. The licence, held by Canadian Forest Products Ltd., was selected randomly and not on the basis of location or level of performance.

Only operations in the Fort St. James Forest District and managed by Canfor's Fort St. James Division were selected for audit because of the large area covered by the licence, which lies within three Ministry of Forests districts. The area of operations audited is primarily north of the town of Fort St. James to Takla Lake and to the eastern side of Great Beaver Lake (see attached map).

Forest Licence A40873 is a volume based licence within the Prince George Timber Supply Area. The licence has an allowable annual cut of 2.2 million cubic metres, of which 815,000 cubic metres is managed by Canfor's Fort St. James Division and includes 100,000 cubic metres that is Canfor's apportionment of Consortium Six (group of companies with an allowable annual cut of 120,000 cubic metres).

2.0 Audit Scope

The audit examined the activities and obligations of Canfor in the areas of operational planning (including forest development plans , silviculture prescriptions , and logging plans), timber harvesting, road construction, maintenance and deactivation, silviculture, and fire protection. These activities were assessed for compliance with the *Forest Practices Code of British Columbia Act* and related regulations (the Code), including the transitional provisions of the Code.

The period for which activities were examined was from September 1, 1997, to October 9, 1998.

The activities carried out during the audit period, and therefore subject to audit, were:

Operational planning

- for the approved 1997-2002 Forest Development Plan
- for 81 aproved silviculture prescriptions, of which 15 supported the harvesting activities examined
- for 50 approved logging plans, of which ten supported the harvesting activities examined

Timber harvesting and road construction, maintenance and deactivation

- harvesting of 102 cutblocks, of which 46 were less than one hectare and harvested under exemption from silviculture prescriptions
- construction of 20 road sections totaling 52 kilometres

- maintenance of approximately 1,100 kilometres of road, involving activities such as surfacing and the cleaning of culverts and ditches
- construction of 13 bridges and maintenance of 31 bridges
- semi-permanent deactivation of six road sections totaling 24 kilometres
- development of road layout and design of seven road sections totaling six kilometres

Silviculture

- site preparation for tree planting on 38 cutblocks and treeplanting of 74 cutblocks
- brushing on 17 cutblocks and tree spacing of three cutblocks
- regeneration surveys of 165 cutblocks

Fire protection

- fire protection planning and infrastructure

Section 3 describes the audit of these activities, and the results. The Board's audit reference manual, "Reference Manual - Compliance Audits, Version 3.0, May 1998", sets out the standards and procedures that were used for this audit.

3.0 Audit Findings

Planning and practices examined
The audit work on selected roads and cutblocks included assessments from the air using helicopters and ground-based procedures. The audit examined:

Operational planning

- for the approved 1997-2002 forest development plan
- for 43 silviculture prescriptions, of which 24 relate to the harvesting activities examined, with 13 of them being approved during the audit period
- for 33 logging plans, of which 24 relate to the harvesting activities examined, with 13 of them being approved during the audit period

Timber harvesting and road construction, maintenance and deactivation

- harvesting of 42 cutblocks, of which 18 were under one hectare and harvested under exemption from silviculture prescriptions
- construction of 17 road sections totaling 39 kilometres
- maintenance of approximately 413 kilometres of road
- semi-permanent deactivation of three road sections totaling nine kilometres
- construction of 13 bridges and maintenance of 19 bridges
- development of road layout and design for three road sections totaling one kilometre

Silviculture

- site preparation for tree planting on 18 cutblocks and tree planting of 19 cutblocks
- brushing of eight cutblocks and tree spacing on one cutblock
- regeneration surveys on 29 cutblocks and a review of silviculture obligations on 19 cutblocks

Fire protection

- fire protection plans and infrastructure

Findings

The audit found that, with the exception of forest health, the forest planning and practices of Canfor were in compliance, in all significant respects, with Code requirements in regard to timber harvesting, silviculture, fire protection, and road construction, maintenance and deactivation, and operational planning.

The audit identified a situation of significant non-compliance, in respect to forest health involving mountain pine beetle, which presents a significant risk to forest resources, as discussed below in section 3.1.

Although the audit found Canfor's riparian management planning and practices complied in all significant respects, there were two areas in which improvement is required. On a number of cutblocks, the silviculture prescriptions did not include the classification of certain streams and lakes. As well, some riparian reserve zones marked in the field were not consistent with those proposed in silviculture prescriptions. These did not constitute significant non-compliance because the riparian management areas established in the field provided adequate protection to the streams and their associated riparian areas. No issues were identified with riparian management areas on cutblocks where harvesting activities were completed.

3.1 Forest Health – bark beetles

The audit identified a situation of significant non-compliance involving the forest health planning and practices of Canfor. Canfor did not adequately record or evaluate information to detect the significant risk to forest resources from mountain pine beetle. As Canfor does not collect adequate information on mountain pine beetle populations, the audit could not conclude on whether Canfor's management strategy reduced the risk from mountain pine beetle.

The audit also found that information about the level of beetle (mountain pine beetle, spruce beetle, etc.) infestations did not support the large size of a number of cutblocks (greater than 60 hectares and up to 350 hectares), for which beetle infestations were the primary reason for the larger cutblock sizes.

Risk from mountain pine beetle to forest resources in Canfor's operating area

Under the requirements of the Code, Canfor must record and evaluate the occurrence of detected forest health factors either currently causing damage or which may potentially cause damage in its operating area, and include the results in its forest development plan. If risks to

forest resources are significant, Canfor must propose management strategies to reduce those risks during the term of its plan.

Mountain pine beetle is a significant risk to forest resources in Canfor's operating area, for the following reasons.

- The operating area of Forest Licence A40873 contains large areas of mature and over-mature lodgepole pine which are highly susceptible to beetle infestations.
- Publicly issued results of surveys commissioned by the Fort St. James Forest District in 1997 indicate that the area infested by mountain pine beetle in the district had increased for three consecutive years and totaled over 38,000 hectares in 1997 (of which 6,000 hectares were identified in Canfor's operating area).
- During the audit period, nine large cutblocks (greater than 60 hectares and up to 350 hectares) were harvested by Canfor to address infestations of mountain pine and spruce beetle.
- Canfor stated that mountain pine beetle has directed their harvesting for the past 20 years.

Canfor's evaluation of risk from mountain pine beetle is based primarily on the results of annual aerial reconnaissance conducted by the Ministry of Forests. Canfor collects very little ground information, such as from probe work, to substantiate beetle population dynamics and to identify areas of timber that are at high risk to beetle attack. In years prior to the audit period, Canfor has on a number of occasions not carried out probe work after being requested by the District Manager or in response to recommendations resulting from walkthroughs. In one area (Whitefish), Canfor has failed to bait and initiate other beetle control measures when requested by the District Manager or where they committed to do so in a forest development plan amendment.

The audit concluded that Canfor did not record or evaluate sufficient information to adequately assess the level of risk from mountain pine beetle to forest resources in its operating area.

As a result of the inadequate information, the audit could not conclude whether Canfor's management strategy for mountain pine beetle was adequate to reduce the risk over the term of the plan. Although the audit could not conclude on the adequacy of the strategy, it found that information on the location of high risk stands of lodgepole pine (based on age class) was not sufficiently used in setting harvesting priorities. As well, a number of large cutblocks harvested to control mountain pine beetle have required subsequent harvesting outside their original boundaries to address mountain pine beetle.

The main sections of the Code that the above non-compliance relates are sections 15(6)(e) and 29(1) of the Operational Planning Regulation.

Large cutblock size

The Code normally restricts cutblock sizes in the Prince George Forest Region to a maximum 60 hectares. This maximum size can be exceeded for a number of reasons, which includes the recovery of timber damaged by insects.

During the audit period nine cutblocks greater than 60 hectares were harvested to address beetle infestations. On three of these cutblocks suitable ground probe data identifying the locations of beetle infestations was collected and the size of the cutblocks was justified.

For six of the nine cutblocks (located in the Whitefish area), minimal ground information (ground probes) was collected on beetle infestations. Sufficient ground information is required to determine the size and shape of cutblocks and to determine the urgency in addressing beetle infestations. Without adequate information it was not possible to assess the appropriateness of the large cutblock sizes for three of the six cutblocks. On the other three cutblocks, information about the level of beetle infestations did not support the large size of the cutblocks, for which beetle infestations were the primary reason for the large cutblock sizes.

4.0 Other Comments

A number of forest resources in Canfor's operating area warrant the establishment of objectives to manage and conserve such forest resources. These include a significant number of lakes with potential for recreation and scenic values. As well, there is a significant First Nations presence in the area.

Under the Forest Practices Code, landscape level planning is expected to provide direction to forest development plans through the setting of landscape level objectives. As well, licensees are required to propose measures to protect certain forest resources where those resources are identified by the Ministry of Forests District Manager.

As the Code has not been fully implemented, no landscape units and objectives were identified in the Fort St. James Forest District to guide Canfor and other licensees operating in the district. The District Manager had not identified or made known any forest resources that may require special management treatment.

Certain resources and measures to protect resources, such as cultural heritage resources, were considered in Canfor's planning processes, even though they were not specified in the forest development plan. Other resources, such as Caribou and old growth douglas fir stands, were not specifically addressed. In many cases, operational plans did not clearly indicate why a resource feature warranted or did not warrant special management treatment.

As landscape level objectives have not been established, and as a result it is not clear if all appropriate forest resources were identified, it was not possible to determine whether all forest resources are being adequately addressed at the landscape level. Also, it was not possible to fully assess the level of protection of such resources at the site level.

The audit did not find Canfor to be in non-compliance with the requirement to propose measures to protect forest resources because the Code has not been fully implemented, as landscape level objectives have not been established and forest resources not identified or made known by the District Manager.

5.0 Audit Opinion

In my opinion, except for the significant non-compliance described below, the operational planning, timber harvesting, silviculture, road construction, maintenance, and deactivation,

and fire protection activities of Canadian Forest Products Ltd. on Forest Licence A40873 - Fort St. James Division, from September 1, 1997 to October 9, 1998 were in compliance, in all significant respects, with the requirements of the Code as of October 1998.

As described in section 3, the audit identified a situation of significant non-compliance. Mountain pine beetle is a significant risk to forest resources in the district. Canfor did not adequately record or evaluate information to detect the significant risk to forest resources from mountain pine beetle. As Canfor does not collect adequate information on mountain pine beetle populations, no comment can be made on whether Canfor's management strategy reduced the risk from mountain pine beetle.

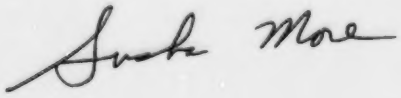
It was also found that information about the level of beetle (mountain pine beetle, spruce beetle, etc) infestations did not support the large size of a number of cutblocks, which were greater than 60 hectares and up to 350 hectares.

Without further qualifying my opinion, I draw attention to section 4, which describes the level of forest resource planning for Canfor's operating area in the Fort St. James Forest District. This situation was not considered to be non-compliance by Canfor and is summarized below.

There are forest resources in Canfor's operating area, such as a substantial number of lakes with potential recreation and scenic values and a significant first nations presence, that may warrant distinct higher-level planning, but were not addressed in the forest development plan. However, licensees are only required to propose measures to protect forest resources where the resources have been identified by the Ministry of Forest's District Manager or set out in landscape unit objectives. As all forest resources have not yet been identified, and landscape unit objectives have yet to be established, it was not possible to determine whether forest resources are being adequately managed in Canfor's operating area.

In reference to compliance, the term "in all significant respects" recognizes that there may be minor instances of non-compliance that either may not be detected by the audit, or that are detected but not considered worthy of inclusion in the audit report.

Sections 2 and 3 of this report from the auditor describe the basis of the audit work performed in reaching this opinion. The audit was conducted in accordance with the auditing standards of the Forest Practices Board. Such an audit includes examining sufficient operational planning, timber harvesting, silviculture, road construction, maintenance, and deactivation, and fire protection practices to support an overall evaluation of compliance with the Code.



Sucha More, CA
Auditor
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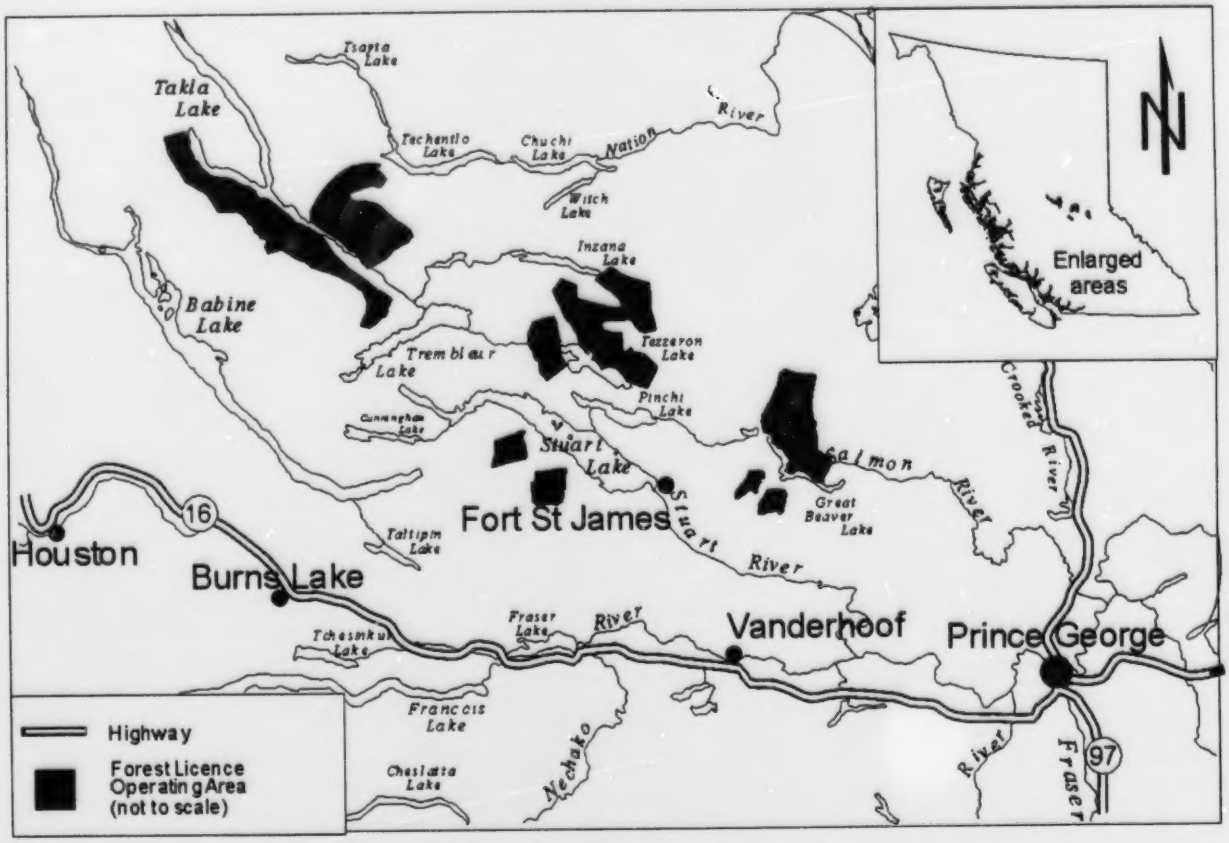
Victoria, British Columbia
August 27, 1999

Audit of
Canadian Forests Products Ltd.
Forest Licence A40873



Endnotes

1. A forest development plan is an operational plan which provides the public and government agencies with information about the location and scheduling of proposed roads and cutblocks for harvesting timber over a period of at least five years. The plan must specify measures that will be carried out to protect forest resources (including water, fisheries, and other forest resources). It must also illustrate and describe how objectives and strategies established in higher level plans, where they have been prepared, will be carried out. Site specific plans are required to be consistent with the forest development plan.

2. A silviculture prescription is a site specific operational plan that describes the forest management objectives for an area to be harvested (a cutblock). The silviculture prescriptions examined in the audit are required to describe the management activities proposed to maintain the inherent productivity of the site, accommodate all resource values including biological diversity, and produce a free growing stand capable of meeting stated management objectives. Silviculture prescriptions must be consistent with higher level plans that encompass the area to which the prescription applies.

3. A logging plan is an operational plan that details how, when, and where timber harvesting and road construction activities will take place in a cutblock, in accordance with the approved silviculture prescription and forest development plan for the area. Information about other forest resource values, plus all current field information for the area, must be clearly shown in the logging plan. The requirement to prepare logging plans was repealed on June 15, 1998, but may be in effect in limited circumstances. Logging plans approved before June 15, 1998 continue to be in effect until timber harvesting is completed.

C. Forest Practices Board Compliance Audit Process

Background

The Forest Practices Board conducts audits of government's and agreement holder's compliance with the *Forest Practices Code of British Columbia Act* and regulations (the Code). The Board is given the authority to conduct these periodic independent audits by section 176 of the Act. Compliance audits examine forest planning and practices to determine whether or not they meet Code requirements.

The Board undertakes both "limited scope" and "full scope" compliance audits. A limited scope audit involves the examination of selected forest practices (e.g., roads, or timber harvesting, or silviculture) and the related operational planning activities. A full scope audit examines all operational planning activities and forest practices.

The Board determines how many audits it will conduct in a year, and what type of audits (limited or full scope), based on budget and other considerations. The Board audits agreement holders who have forest licences or other tenures under the *Forest Act* or the *Range Act*. The Board also audits government's Small Business Forest Enterprise Program (SBFEP) which is administered by Ministry of Forests district offices. Selection of agreement holders and district SBFEPs for audit is done randomly, using a computer program, to ensure a fair, unbiased selection of auditees.

Audit Standards

Audits by the Forest Practices Board are conducted in accordance with the auditing standards developed by the Board. These standards are consistent with generally accepted auditing standards.

The audits determine compliance with the Code based on criteria derived from the *Forest Practices Code of British Columbia Act* and its related regulations. Audit criteria are established for the evaluation or measurement of each practice required by the Code. The criteria reflect judgments about the level of performance that constitutes compliance with each requirement.

The standards and procedures for compliance audits are described in the Board's *Compliance Audit Reference Manual*.

Audit Process

Conducting the Audit

Once the Board selects an audit and decides on the scope of the audit (limited scope or full scope), the staff and resources required to conduct the audit and the period covered by the audit are determined. Board staff also meet with the party being audited to discuss the logistics of the audit before commencing the work.

All the activities carried out during the period subject to audit are identified. This includes activities such as the sites harvested or replanted and road sections built or deactivated during the audit period. The items that comprise each forest activity are referred to as a "population." For example, all sites harvested form the "timber harvesting population." All road sections constructed form the "road construction population." The populations are then sub-divided based on factors such as the characteristics of the sites and the potential severity of the consequences of non-compliance on the sites.

The most efficient means of obtaining information to conclude whether there is compliance with the Code is chosen for each population. Because of limited resources, sampling is usually relied upon to obtain audit evidence, rather than inspecting all activities.

Individual sites and forest practices within each population have different characteristics, such as the type of terrain or type of yarding. Each population is divided into distinct sub-populations on the basis of common characteristics (e.g., steep ground vs. flat ground). A separate sample is selected for each population (e.g., the cutblocks selected for auditing timber harvesting). Within each population, more audit effort (i.e., more audit sampling) is allocated to the sub-population where the risk of non-compliance is greater.

Audit work in the field includes assessments from helicopters and intensive ground procedures such as the measurement of specific features like road width. The audit teams generally spend two to three weeks in the field.

Evaluating the Results

The Board recognizes that compliance with the many requirements of the Code is more a matter of degree than absolute adherence. Determining compliance requires the exercise of professional judgment within the direction provided by the Board.

Auditors collect, analyze, interpret and document information to support the audit results. The audit team, comprised of professionals and technical experts, first determines whether forest practices are in compliance with Code requirements. For those practices considered to not be in compliance, the audit team then evaluates the degree to which the practices are judged not in compliance. The significance of the non-compliance is determined based on a number of criteria including the magnitude of the event, the frequency of its occurrence, and the severity of the consequences.

As part of the assessment process, auditors categorize their findings into the following levels of compliance:

Compliance – where the auditor finds that practices meet Code requirements.

Not significant non-compliance – where the auditor, upon reaching a non-compliance conclusion, determines that a non-compliance event, or the accumulation and consequences of a number of non-compliance events, is not significant and is not considered worthy of reporting.

Significant non-compliance – where the auditor determines that the event or condition, or the accumulation and consequences of a number of non-compliance events or conditions, is significant and is considered worthy of reporting.

Significant breach – where the auditor finds that significant harm has occurred or is beginning to occur to persons or the environment as a result of the non-compliance. A significant breach can also result from the cumulative effect of a number of non-compliance events or conditions.

Identification of a possible significant breach requires the auditor to conduct tests to confirm whether or not there has been a breach. If it is determined that a significant breach has occurred, the auditor is required by the *Forest Practices Board Regulation* to immediately advise the Board, the party being audited, and the Ministers of Forests, Energy & Mines, and Environment, Lands & Parks.

Reporting

Based on the above evaluation, the auditor then prepares the "Report from the Auditor" for submission to the Board. The party being audited is given a draft of the report before it is submitted to the Board so that the party is fully aware of the findings. The party is also kept fully informed of the audit findings throughout the process, and is given opportunities to provide additional relevant information and to ensure the auditor has complete and correct information.

Once the auditor submits the report, the Board reviews it and determines whether any party or person is potentially adversely affected by the audit findings. If so, the party or person must be given an opportunity to make representations before the Board decides the matter and issues a final report to the public and government. The representations allow potentially adversely affected parties to present their views to the Board.

At the discretion of the Board, representations may be written or oral. The Board will generally offer written representations to potentially adversely affected parties, unless the circumstances strongly support the need for an oral hearing.

The Board then reviews both the report from the auditor and the representations before preparing its final report, which includes the Board's conclusions and may also include recommendations, if appropriate.

If the Board's conclusions or recommendations result in newly adversely affected parties or persons, additional representations would be required.

Once the representations have been completed, the report is finalized and released: first to the auditee and then to the public and government.

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